Formative Assessment Task

2nd Grade: Measurement and Data

### 2. MD. 10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put- together, take-apart, and compare problems using information presented in a bar graph.

### Learning Targets:

* I can solve addition and subtraction problems using data from a picture or bar graph.

**Materials:**

* One completed graph page, possibly made into a folder game and laminated. (See below and/or first activity for 2.MD.10)
* Dry Erase Boards, markers and erasers for the center.
* A brown paper bag with red, blue, green, and yellow chips/color tiles.

**Directions:**

1. Students will work in partners or in a center with a partner.
2. One student will draw a colored chip from the brown paper bag.
3. The student will record the chip drawn on the graph.
4. The other student will take his/her turn.
5. Repeat until all chips are drawn.
6. Students will answer questions about their graph on another piece of paper.

**Considerations:**

* This Formative Assessment is designed to observe student ability to interpret the graph.
* These are the other learning targets for this standard. (See activity 2.MD.10)
* The teacher will want to create several brown paper bags filled with colored plastic chips and will want to number them and keep track of how much of each color is in each bag.

**A Bag of Chips**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 10 |  |  |  |  |
| 9 |  |  |  |  |
| 8 |  |  |  |  |
| 7 |  |  |  |  |
| 6 |  |  |  |  |
| 5 |  |  |  |  |
| 4 |  |  |  |  |
| 3 |  |  |  |  |
| 2 |  |  |  |  |
| 1 |  |  |  |  |

Red Blue Green Yellow

Number of Chips Drawn

Color of Chips Drawn

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

A Bag of Chips

Response Page

1. How many chips did you pull from the bag? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Which color did you draw the most?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Which color did you draw the least? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. How many red and blue chips did you draw in all? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. How many green and yellow chips did you draw in all? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_

A Bag of Chips

Response Page

1. How many chips did you pull from the bag? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Which color did you draw the most?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Which color did you draw the least? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. How many red and blue chips did you draw in all? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. How many green and yellow chips did you draw in all? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**A Bag of Chips**

*This is a 2-player game.*

**Materials**

1. A brown paper bag full of colored chips or cubes.
2. A dry erase marker.
3. A pencil.
4. An “A Bag of Chips” response page.

**Directions:**

1. Gather materials and find a place to sit.
2. Player 1 pulls a chip out of the paper bag.
3. Player 1 records the color of the chip on the graph.
4. Player 2 pulls a chip out of the paper bag.
5. Player 2 records the color of the chip on the graph.
6. Repeat until there are no more chips in the bag.
7. Answer the questions on your “A Bag of Chips” response page.
8. Turn your response page in.

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| Teacher notes:  Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve a simple put-together, take-apart, and compare problems for using information presented in a bar graph.  Collecting data to answer a question is an important skill. Once the data have been collected, representing it in a picture or bar graph helps us analyze what we have discovered. Using an appropriate graph to display data is an important part of this standard. Once the graph has been constructed, it is important that questions are asked to talk about the information that is displayed in the graph. Questions should be more than "How many?" Questions should focus on drawing conclusions, comparing, and make generalizations about the data that are represented in the graph.  Students who demonstrate complete mastery correctly complete the bar graph and answer all 5 questions correctly.  Students who demonstrate substantial accomplishment correctly complete the bar graph and answer 4 of the 5 questions correctly.  Students who demonstrate partial accomplishment correctly complete the bar graph and answer 3 of the 5 questions correctly.  Some students may draw a picture or put an x in each box instead of coloring in the correct number of boxes in each column of the bar graph. If they answer the questions correctly, they demonstrate partial accomplishment because they demonstrate confusion between line plots, bar graphs and pictographs. |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Not yet:** Student shows evidence of misunderstanding, incorrect concept or procedure | | | **Got It:** Student essentially understands the target concept. | | | | **NEEDS IMPROVEMENT**  **(N)** | | **WITH ASSISTANCE**  **(W)** | | | **INDEPENDENT**  **(I)** | | **0 Unsatisfactory:**  **Little Accomplishment**  The task is attempted and some mathematical effort is made. There may be fragments of accomplishment but little or no success. Further teaching is required. | **1 Marginal:**  **Partial Accomplishment**  Part of the task is accomplished, but there is lack of evidence of understanding or evidence of not understanding. Further teaching is required. | | **2 Proficient:**  **Substantial Accomplishment**  Student could work to full accomplishment with minimal feedback from teacher. Errors are minor. Teacher is confident that understanding is adequate to accomplish the objective with minimal assistance. | **3 Excellent:**  **Full Accomplishment**  Strategy and execution meet the content, process, and qualitative demands of the task or concept. Student can communicate ideas. May have minor errors. | |   Adapted from Van de Walle, J. (2004) Elementary and Middle School Mathematics: Teaching Developmentally. Boston: Pearson Education, 65 |